(ILD) experience a high-risk of treatment-related morbidity and mortality after any pulmonary radiotherapy. The purpose of this study is to systematically review existing literature on SABR-related mortality and ILD-specific toxicity for patients with co-existing ES-NSCLC and ILD.
Methods and Materials: The MEDLINE and Embase databases were queried from their respective dates of inception to January 21, 2016. A total of 3101 records were reviewed. Studies involving advanced stage NSCLC, non-SABR radiotherapy technique, guidelines, reviews, meta-analyses, correspondences, or pediatric populations were excluded. SABR-related mortality was defined as any death secondary to radiation pneumonitis or deaths determined to be directly related to radiation therapy by individual study investigators. Treatment-related ILD-specific toxicity was defined as Grade ≥ 3 radiation pneumonitis following SABR. Data on treatment-related mortality and ILD-specific toxicity for surgical studies were also extracted for reference. Mortality and morbidity results were summarized with weighted means.
Results: A total of 13 SABR studies published between 2003 and 2015 were included in this systematic review. Ten studies were retrospective in design, with the others being a mixed retrospective/prospective observational study, a Phase I clinical trial and a case report. A total of 122 patients were included in the reports, with most studies including medically inoperable patients. Weighted mean for treatment-related mortality was 15.6% after SABR in patients with co-existing ES-NSCLC and ILD. Treatment-related ILD-specific toxicity occurred in 25.9% of SABR patients. An additional 28 surgical studies were reviewed, which included a total of 1681 patients. From 1999 to 2015, medically operable patients with co-existing ES-NSCLC and ILD who underwent surgery experienced treatment-related mortality of 2.0% and ILD-specific toxicity of 11.7%.
Conclusions: A high incidence of treatment-related mortality (16%) and ILD-specific toxicity (26%) was observed after SABR for patients with co-existing ES-NSCLC and ILD. Many SABR patients were medically inoperable, preventing direct comparisons with surgical outcomes. Patients should be cautioned about this increased risk of toxicity. Future studies should aim to establish a specific diagnosis of the type and severity of ILD prior to the treatment of any patient with ES-NSCLC and co-existing pulmonary comorbidity.

239
SARCOPENIA IS ASSOCIATED WITH WORSE OVERALL SURVIVAL IN PATIENTS WITH LOCALLY ADVANCED NON-SMALL CELL LUNG CANCER
Petra Grendarova[1], Rahul Arora[2], Gwyn Bebb[1], Adrijana D'Silva[2], Banerjee Robyn[1]
[1]Tom Baker Cancer Centre, University of Calgary, Calgary, AB
[2]University of Calgary, Calgary, AB

Purpose: Sarcopenia, a depletion of a skeletal muscle with or without loss of fat mass, has been studied as a prognostic factor in several cancers. It has been shown to be associated with poorer survival and worse post-operative outcomes independent of patients' body weight. However, it has not been used in routine clinical evaluation nor has its prognostic significance in lung cancer been evaluated. This study examined the value of sarcopenia as a prognostic factor in patients with locally advanced non-small cell lung cancers treated with radical radiation and chemotherapy.
Methods and Materials: This study included all patients with Stage III non-small cell lung cancer treated with radical radiation and chemotherapy at a regional cancer centre using the Glans Look database between 2006 and 2012. Body composition analysis of planning or pre-treatment diagnostic CT scans was performed using Eclipse (Varian, Palo Alto, CA) per a previously validated and reported technique. Total skeletal muscle area was calculated on a single axial abdominal CT slice at the level of L3 vertebral body and adjusted for stature. Patients were classified as sarcopenic or nonsarcopenic using validated sex-specific cut-offs of L3 skeletal muscle index (52.4 cm^2/m^2 for males and 38.5 cm^2/m^2 for females). Kaplan-Meier survival estimates and Cox proportional-hazard models were used to determine the impact of sarcopenia on overall survival.
Results: A total of 106 patients (53% males, 47% females), with mean age 65 years (SD = 8.7) were analyzed. Mean BMI was 26.3 kg/m^2 (SD = 6.7 kg/m^2). Only one patient was underweight (BMI < 18.5), 40% patients had normal weight and 60% of patients were either overweight or obese. Overall, 38.7% patients were sarcopenic. The prevalence of sarcopenia was 56% among patients with normal weight and 27% among overweight or obese patients. Sarcopenia was identified as an independent predictor of overall survival on multivariate analysis (hazard ratio 1.71; 95% CI 1.09 – 2.72, p = 0.019). Other significant predictors for worse overall survival included age over 65 years and absence of concurrent chemotherapy. Median survival in sarcopenic patients was 21 months (95% CI 13 – 28 months) compared with 31 months (95% CI 20 – 39 months) in nonsarcopenic patients.
Conclusions: Sarcopenia is independently associated with inferior survival in patients with locally advanced non-small cell lung cancers treated with chemoradiotherapy. It can be routinely assessed in clinical practice using radiation planning software. Sarcopenia as independent predictor for survival and toxicity outcomes should be included in larger prospective clinical studies.

240
THE MANAGEMENT OF SMALL CELL LUNG CANCER WITH RADIOTHERAPY - A PAN-CANADIAN SURVEY OF RADIATION ONCOLOGISTS
Jeevin Shahi[1], James Wright[1], Zsolt Gabos[2], Anand Swaminath[1]
[1]McMaster University, Hamilton, ON
[2]University of Edmonton, Edmonton, AB

Purpose: The management of small cell lung cancer (SCLC) with radiotherapy (RT) is variable, with many treatment regimens described in the literature. We created a survey to assess patterns of practice and clinical decision making in the management of SCLC by Canadian radiation oncologists (ROs).
Methods and Materials: A 35-item survey was e-mailed to Canadian ROs. Questions investigated the role of RT, dose/timing of RT, target delineation, and use of prophylactic cranial irradiation (PCI) in limited stage (LS) and extensive stage (ES) SCLC.
Results: Fifty-two eligible ROs responded. For LS-SCLC, staging (98%) and simulation/dosimetric (96%) CT imaging were key determinants of RT suitability. The two most common dose/fractionation schedules were 40-45 Gy/15 once daily (QD) (40%) and 45 Gy/30 twice daily (33%). Elective nodal irradiation was performed by 31% of ROs. Preferred management of clinical T1/2aN0 SCLC favored primary chemoradiotherapy (64%). For ES-SCLC, consolidative thoracic RT was frequently offered (88%), with a preferred dose/fractionation of 30 Gy/10 QD (70%). Twenty-three ROs (44%) would not offer extrathoracic consolidative RT. After response to initial treatment, PCI was generally offered in both LS- (100%) and ES- (98%) SCLC. Performance status, baseline cognition, and pre-PCI brain imaging were important clinical factors assessed prior to offering PCI.
Conclusions: There are both variations and alignment in practice in the management of SCLC by Canadian ROs. Future clinical trials and national treatment guidelines may reduce variability in treating early-stage disease, optimizing dose/targeting in LS-SCLC, and defining suitability for both PCI and consolidative RT.

241
PROPHYLACTIC CRANIAL IRRADIATION: DOES AGE MATTER?
Jordan Stosky, Theodora A Koulis, Elizabeth Kurien
University of Calgary, Calgary, AB

Purpose: Prophylactic cranial irradiation (PCI) has been shown to provide a survival benefit and decrease occurrence of brain metastases in patients with small cell lung cancer (SCLC).